



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,577	06/21/2006	Jorge Ancheyta Juarez	50293	3745
1609	7590	04/01/2009		
ROYLANCE, ABRAMS, BERDO & GOODMAN, L.L.P.			EXAMINER	
1300 19TH STREET, N.W.				MCCAIG, BRIAN A
SUITE 600			ART UNIT	PAPER NUMBER
WASHINGTON,, DC 20036			1797	
			MAIL DATE	DELIVERY MODE
			04/01/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/563,577	ANCHEYTA JUAREZ ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	BRIAN MCCAIIG	1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 05 January 2009.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 10-30 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 10-30 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on January 6, 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Summary***

1. This is the final Office action based on the 10/563577 application filed June 21, 2006 and amended January 5, 2009.
2. Amendment of claims 16, 24, and 26 are noted.
3. New grounds of rejection necessitated by applicant's amendment follow.

### ***Response to Amendment***

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 10-14 and 19-24 stand rejected under 35 U.S.C. 102(b) as being anticipated by EVANS ET AL (US 4657664), hereafter referred to as EVANS.**

6. With regard to claims 10-14, EVANS discloses [see, e.g., the abstract; column 7, lines 37-42; column 12, lines 10-11; Tables 3 & 4] a multi-stage process for the hydroconversion of heavy hydrocarbon feedstocks containing asphaltenes, metals, and sulfur compounds wherein the first stage is comprised of hydrodemetalation with a demetalation catalyst followed by hydrodesulfurization/hydrodenitration with a desulfurization catalyst and reaction conditions including temperatures ranging from 371-454° C, pressures ranging from 14-211 kg/cm<sup>2</sup>, liquid space velocities ranging from 0.1-5 per hour, and hydrogen feed rate of 356-2671 m<sup>3</sup>/m<sup>3</sup> [column 9, lines 33-46 & column 10, lines 3-15], which overlaps the required ranges in the instant application.

7. With regard to claims 19-24, EVANS discloses [column 10, lines 26-29] that in the reaction zones, catalysts may be employed in the form of a fixed-bed or ebullated-bed wherein the demetalation (first hydrotreatment) catalyst

is comprised of a hydrogenation component selected from Group VIB metals such as molybdenum (Mo) and Group VIIIB metals such as nickel (Ni) which are deposited on an inorganic oxide support such as alumina and the desulfurization catalyst is comprised of hydrogenation metals selected from Groups VIB and VIIIB as well, which also includes Mo and Ni, respectively.

***Claim Rejections - 35 USC § 102/35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 15-18, and 24 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EVANS ET AL (US 4657664), hereafter referred to as EVANS.**

10. With regard to claim 15, EVANS discloses [Tables IV and column 12, lines 10-11] that the solids concentration was 0.59 wt%, which is within the range required in the instant application as is the 0.63 wt% in Table IV. Furthermore, EVANS discloses that unit operability is difficult when the solids concentration is greater than 1 wt%. Therefore, it would be obvious to operate the process at temperatures with catalysts that will reduce the formation of sludge and sediments below 1 wt%, including the 0.65 wt% as required in the instant application.

11. Moreover, since EVANS discloses [column 7, line 43-column 9, line 33] similar hydrodemetallation and hydrodesulfurization catalysts as the applicant in addition to the similar reaction conditions, it is expected that formations of sediments and sludge will be within the required range.

12. With regard to claims 16-18, EVANS discloses [column 7, line 43-column 9, line 33] similar hydrodemetallation and hydrodesulfurization catalysts as the applicant in addition to similar reaction conditions as described previously. Therefore, the applicant is reminded that where an applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the

function is not explicitly disclosed by the reference, or where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In this case, claims 16-18 require particular properties of the product of the process which are not explicitly disclosed by EVANS but are likely to be coterminous with or at least overlap those in the application given the similar feedstocks, catalysts, and reaction conditions as previously discussed. Furthermore, when the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

#### ***Claim Rejections - 35 USC § 103***

13. **Claims 25-28 and 30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over EVANS ET AL (US 4657664) in view of TRUEBA ET AL in the *European Journal of Inorganic Chemistry*, hereafter referred to as EVANS and TRUEBA, respectively.**

14. As previously discussed, EVANS discloses the use of an alumina support of which  $\gamma$ -alumina is perhaps the most important with direct application as a catalyst and catalyst support in the petroleum industry as evidenced by TRUEBA [paragraph 1, page 3393], which renders its use obvious to one of ordinary skill in the art. The applicant is reminded that EVANS discloses a process using an alumina support in the petroleum industry that uses Group VI and Group VIII metals, and TRUEBA discloses the use of Group VI and Group VIII metals as active phase metals supported on  $\gamma$ -alumina supports [page 3400, section 4.1]

15. With respect to claims 26 and 27, EVANS discloses

c. passing hydrogen and a hydrocarbon feedstock having a specific gravity less than 32° API [see Tables III and VII] and a content of distillates recover at 538°C that is less than 80% by volume, which is inherent in the disclosure of EVANS in which the feedstock consists of atmospheric and vacuum residua

having boiling points in excess of 600° C [column 5, lines 49-53], to a first reaction stage having the reaction conditions similar to those required in the instant application [column 9, lines 33-46 & column 10, lines 3-15] on ebullated bed reactors [column 7, lines 37-41 & column 10, lines 26-29] with Group VI-Group VIII metal catalysts, of which molybdenum and nickel, respectively, are obvious variants, on an alumina support, of which  $\gamma$ -alumina is an obvious variant, and

d. passing hydrogen and hydrotreated hydrocarbon to a second reaction state in an fixed- or ebullated-bed reactor [column 10, lines 26-29] under similar reaction conditions to the instant application using a cobalt-molybdenum catalyst [column 9, lines 7-9 & column 9, lines 33-46 & column 10, lines 3-15] on an alumina support, of which  $\gamma$ -alumina is an obvious variant.

16. Furthermore, as previously discussed, EVANS discloses that unit operability is difficult when the solids concentration is greater than 1 wt%. Therefore, it would be obvious to operate the process at temperatures with catalysts that will reduce the formation of sludge and sediments below 1 wt%, including the 0.8 wt% (or, more specifically, 0.65 wt%) as required in claims 26, and, further, in claims 27 and 29 of the instant application.

17. Moreover, since EVANS discloses [column 7, line 43-column 9, line 33] similar hydrodemetallation and hydrodesulfurization catalysts as the applicant in addition to the similar reaction conditions, it is expected that formations of sediments and sludge will be within the required range.

18. With regard to claim 28, EVANS discloses products produced by the process [see, e.g., Table IV].

19. With respect to claim 30, reference is made to the preceding discussion of EVANS and TRUEBA.

#### ***Response to Arguments***

20. The applicant argues that the pressure range of EVANS fails to render the pressure range of the instant application obvious according to *Atofina v Great Lakes Chem. Corp.*, 78 USPQ2d 1417.

21. The applicant's argument is not persuasive because while the court held that a reference temperature range of 100-500 degrees C did not describe the claimed range of 330-450 degrees C with sufficient specificity to be

anticipatory, the issue of anticipation has to do with "sufficient specificity" which is fact dependent [see MPEP 2131.03]. The issue is whether the reaction pressure of EVANS is disclosed with sufficient specificity to anticipate the range of the instant application. EVANS discloses in example 1 a pressure of 2000 psig [Table 2] which equates to 140 kg/cm<sup>2</sup>, which is slightly outside the range of the instant application whose upper terminus is 130 kg/cm<sup>2</sup>, and a pressure of 2700 psig in example 3, which equates to 190 kg/cm<sup>2</sup>. The applicant argues that these disclosures are strong evidence that the range of the instant application is not anticipated by EVANS. However, these examples are used to show the effectiveness of the process whose feedstock is a very heavy hydrocarbon as evidenced by the API gravities, metal concentrations, and fractions boiling above 1000° F [see Table III and VII]. In other words, these examples are used to illustrate the effectiveness of the process using an extreme case and by no means indicate the anticipated reaction variables for the process. This assertion is evidenced by the disclosure of EVANS that lower pressures may be used, as low as 14 kg/cm<sup>2</sup>, depending upon the feedstock [column 10, lines 3-14].

22. For comments concerning the applicant's other argument, reference is made to the preceding "Response to Amendment."

### **Conclusion**

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

24. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 1797

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN MCCAIG whose telephone number is (571) 270-5548. The examiner can normally be reached on M-F 8-430.
26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Calderola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BAM  
3/25/2009

/Glenn A Calderola/  
Acting SPE of Art Unit 1797